

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A guide route search device, the device comprising:
a specification unit adapted to specify a plurality of locations which a user drops in before reaching a destination;

a route pattern generation unit adapted to generate all via-sequence patterns in each of which the specified locations are visited once in sequence;

a calculation unit adapted to calculate an arrival time at each of the specified locations when successively visiting those locations in each of the via-sequence patterns generated by the route pattern generation unit while avoiding passing through congested places and/or places which ~~[[may be]]~~ are congested in accordance with predetermined traffic information, wherein the calculation unit operates to search a route between two consecutive locations in the via-sequence, and when a link or node to be passed through during congested time slots are included in data for the route between the two consecutive locations, the calculation unit further operates to change the value of cost information of the congested link or node to a predetermined greater value and thereafter to re-search a route between the two consecutive locations;

a judgment unit adapted to judge whether the calculated arrival time of each location matches conditions for an arrival time at each location; and

a selection unit adapted to select the via-sequence being an optimum route via the locations where the judgment unit has judged that the conditions are matched at all the specified locations, as a via-sequence of the guide route,

wherein the route pattern generation unit operates to generate a plurality of route patterns on the basis of the via-sequence patterns and to sort the generated route patterns in ascending order of the arrival time at the destination.

2. (Currently Amended) The guide route search device according to claim 1, wherein the calculation unit comprises:

- a determination part for determining a via-sequence of the specified plurality of via-locations;

- a search part for searching a route between two consecutive locations in the via-sequence;

- a re-search part for re-searching a route between the two locations when the searched route includes a congested place and/or a place which [[may be]] is congested, so as to avoid the congested place and/or the place which [[may be]] is congested; and

- a time calculation part for calculating an arrival time at each of the locations, either based on a travel time between the two locations of a route searched by the search part when the route searched by the search part does not include a congested place and/or a place which [[may be]] is congested, or based on a travel time between the two locations of a route re-searched by the re-search part when the route searched by the search part includes a congested place and/or a place which [[may be]] is congested.

3. (Currently Amended) A guide route search device, the device comprising:

- a specification unit adapted to specify a plurality of locations;

- a route pattern generation unit adapted to generate all via-sequence patterns in each of which the specified locations are visited once in sequence;

- a search unit adapted to search a route between two successive locations in each of the via-sequence patterns generated by the route pattern generation unit;

- a first time calculation unit adapted to calculate an arrival time at each of the locations based on a travel time between the two locations in the route searched by the search unit, wherein the calculation unit operates to search a route between two

consecutive locations in the via-sequence, and when a link or node to be passed through during congested time slots are included in data for the route between the two consecutive locations, the calculation unit further operates to change the value of cost information of the congested link or node to a predetermined greater value and thereafter to re-search a route between the two consecutive locations;

a first judgment unit adapted to judge whether the arrival time of each location calculated by the first time calculation unit matches an arrival time condition at each location;

a re-search unit adapted to re-search a route between the two locations when the route which has been judged by the first judgment unit to match the arrival time condition includes a congested place and/or a place which [[may be]] is congested, so as to avoid the congested place and/or the place which [[may be]] is congested;

a second time calculation unit adapted to calculate an arrival time at each of the locations based on a travel time between the two locations in the route re-searched by the re-search unit;

a second judgment unit adapted to judge whether the arrival time at each location calculated by the second time calculation unit matches the arrival time condition at each location; and

a selection unit adapted to select as the via-sequence of a guide route a single via-sequence from the via-sequences where the first judgment unit has judged that the conditions are matched at all the locations specified and which do not include congested places and/or places which [[may be]] are congested, and from via-sequences where the second judgment unit has judged that the conditions are matched at all the locations specified,

wherein the route pattern generation unit operates to generate a plurality of route patterns on the basis of the via-sequence patterns and to sort the generated route patterns in ascending order of the arrival time at each last location.

4. (Previously Presented) The guide route search device according to claim 3, wherein

the second time calculation unit operates so as to generate arrival times for all the selected locations whenever a travel time between the two locations is computed, and

the judgment unit operates so as to judge whether the arrival time of each location generated by the time calculation unit matches the arrival time condition at each location whenever a travel time between the two locations is computed.

5. (Currently Amended) The guide route search device according to claim 3, wherein

the first judgment unit operates so as to judge whether the arrival time at each location calculated by the first time calculation unit matches a guide time slot at each location;

the second judgment unit operates so as to judge whether the arrival time at each location calculated by the second time calculation unit matches a guide time slot at each location; and

the re-search unit operates so as to re-search a route between the two locations in which the arrival times at a portion of or all of the locations are judged by the first judgment unit to be earlier than the respective guide time slots thereof, and when the route includes congested places and/or places which are congested for via-sequences where the arrival times of the remaining locations match the respective guide time slots thereof, re-searches a route between the two locations so as to avoid the congested places and/or the places which are congested.

6. (Currently Amended) A guide route search method, the method comprising the steps of:

specifying a plurality of locations which a user drops in before reaching a destination;

generating all via-sequence patterns in each of which the specified locations are visited once in sequence;

calculating an arrival time at each of the specified locations when successively visiting those locations in each of the via-sequence patterns generated in the generating step while avoiding passing through congested places and/or places which [[may be]] are congested in accordance with predetermined traffic information, wherein the calculation step performs searching a route between two consecutive locations in the via-sequence, and when a link or node to be passed through during congested time slots are included in data for the route between the two consecutive locations, the calculation step further performs changing the value of cost information of the congested link or node to a predetermined greater value and thereafter re-searching a route between the two consecutive locations;

judging whether the calculated arrival time of each location matches conditions for an arrival time at each location; and

selecting the via-sequence being an optimum route via the locations wherein it has been judged by the judging step that the conditions are matched at all the specified locations, as a via-sequence of the guide route,

wherein the via-sequence patterns generating step further comprises generating a plurality of route patterns on the basis of the via-sequence patterns and sorting the generated route patterns in ascending order of the arrival time at the destination.

7. (Canceled)